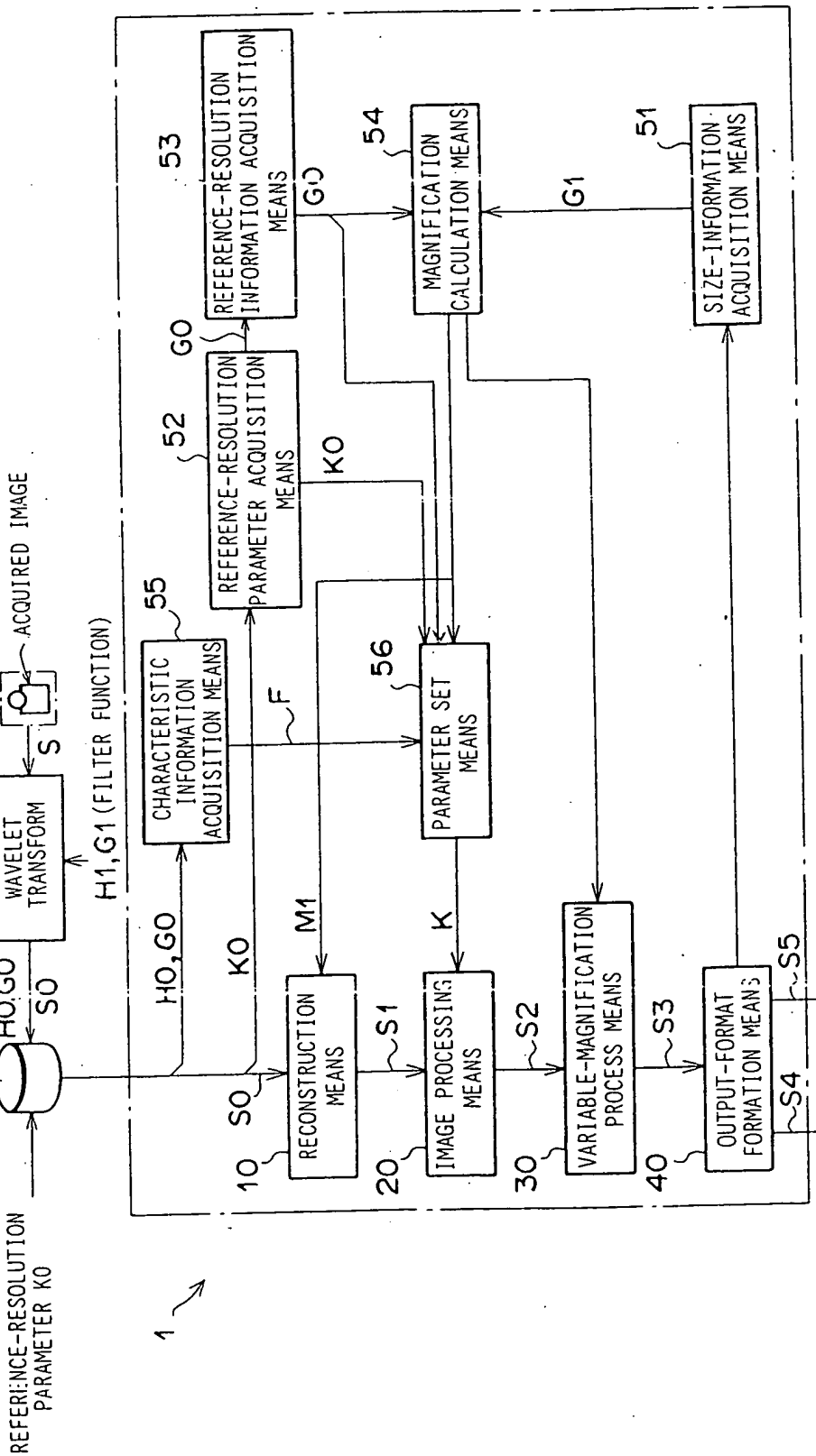

1
FILE SERVER
62
REFERENCE-RESOLUTION PARAMETER K0
H0,G0
S0
61
WAVELET TRANSFORM
H1,G1 (FILTER FUNCTION)
S
ACQUIRED IMAGE
H0,G0
K0
M1
K
S0
10
RECONSTRUCTION MEANS
S1
20
IMAGE PROCESSING MEANS
S2
30
VARIABLE-MAGNIFICATION PROCESS MEANS
S3
40
OUTPUT-FORMAT FORMATION MEANS
S4
S5
71
CRT
72
FILM
CHARACTERISTIC INFORMATION ACQUISITION MEANS
55
F
56
PARAMETER SET MEANS
52
REFERENCE-RESOLUTION PARAMETER ACQUISITION MEANS
K0
G0
53
REFERENCE-RESOLUTION INFORMATION ACQUISITION MEANS
G0
54
MAGNIFICATION CALCULATION MEANS
G1
51
SIZE-INFORMATION ACQUISITION MEANS

FIG. 1

FIG.2

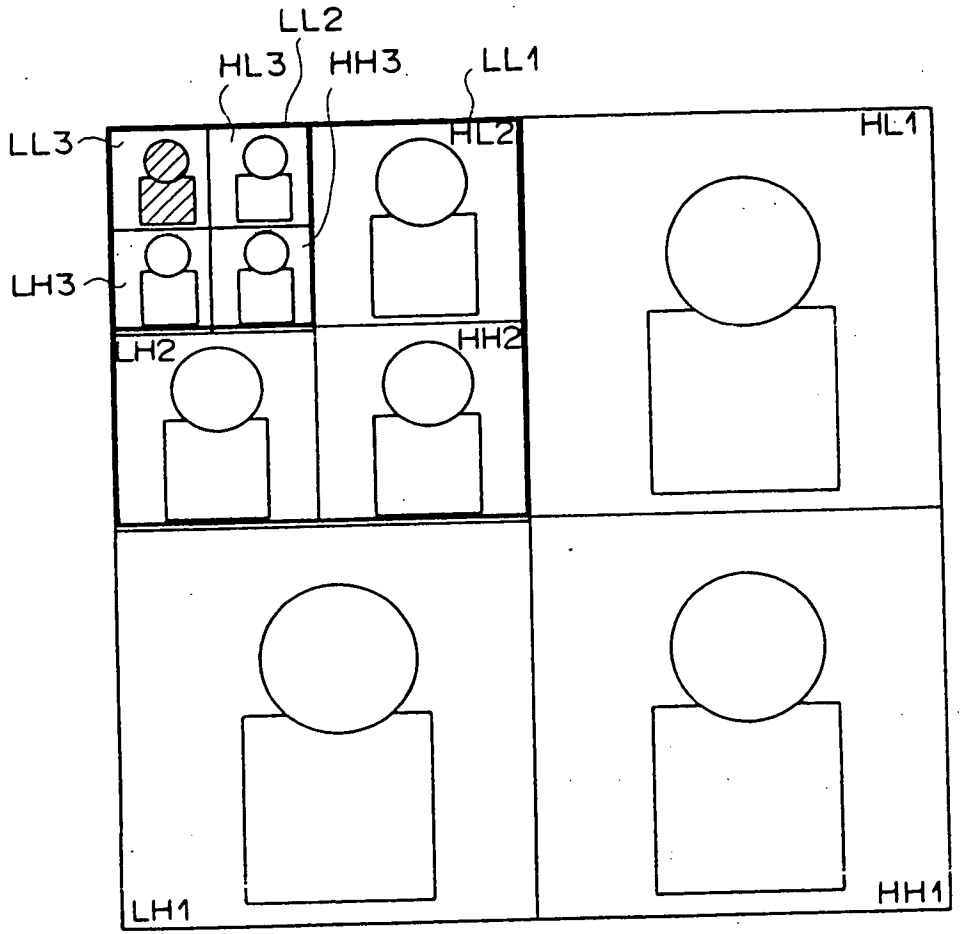
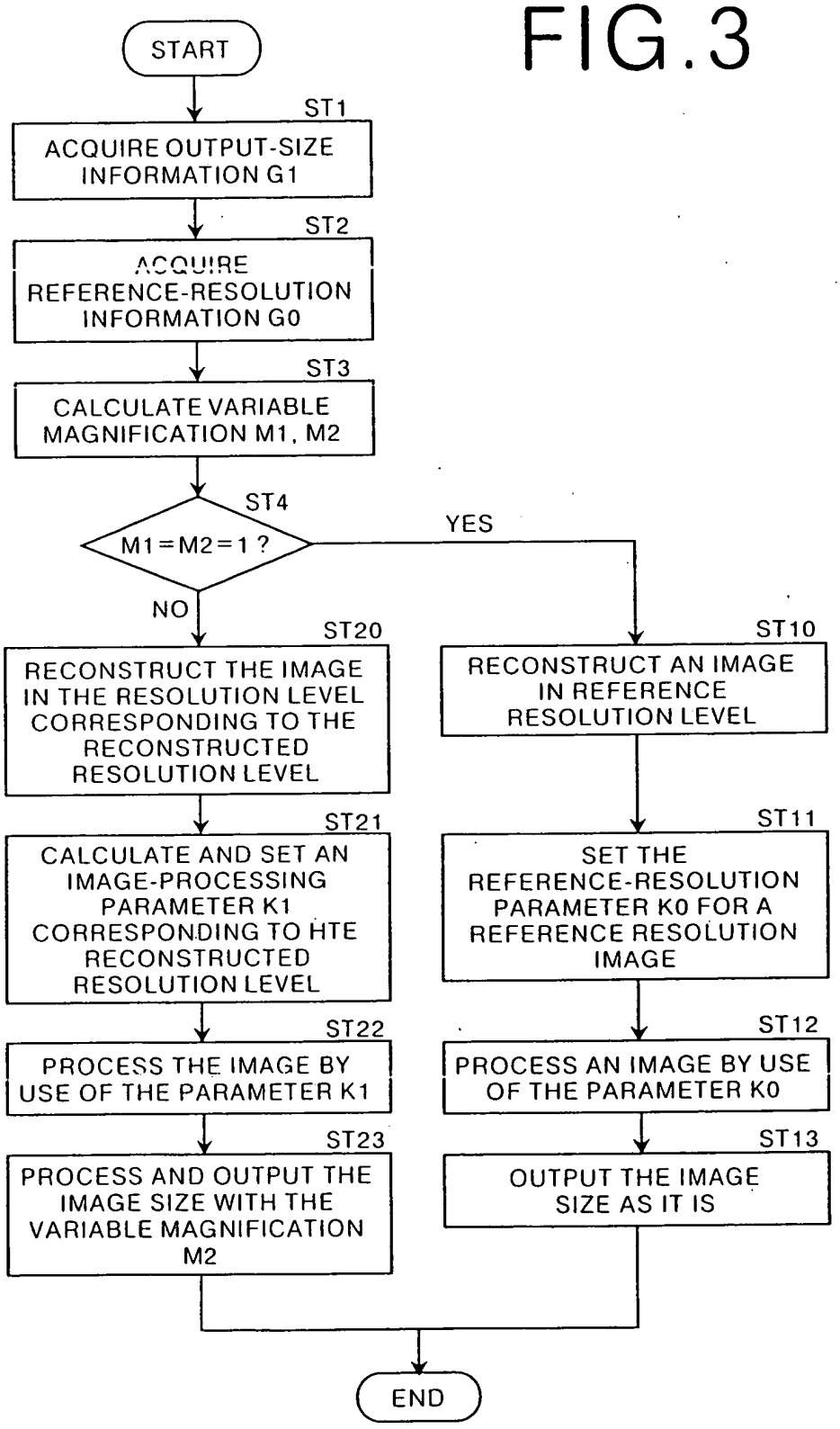


IMAGE SIGNALS SPLIT BY WAVELET FUNCTION

P68218 US 02/08/01

FIG.3


START
ST1
ACQUIRE OUTPUT-SIZE INFORMATION G1
ST2
ACQUIRE REFERENCE-RESOLUTION INFORMATION G0
ST3
CALCULATE VARIABLE MAGNIFICATION M1, M2
ST4
M1=M2=1 ?
YES
NO
ST20
RECONSTRUCT THE IMAGE IN THE RESOLUTION LEVEL CORRESPONDING TO THE RECONSTRUCTED RESOLUTION LEVEL
ST21
CALCULATE AND SET AN IMAGE-PROCESSING PARAMETER K1 CORRESPONDING TO HTE RECONSTRUCTED RESOLUTION LEVEL
ST22
PROCESS THE IMAGE BY USE OF THE PARAMETER K1
ST23
PROCESS AND OUTPUT THE IMAGE SIZE WITH THE VARIABLE MAGNIFICATION M2
ST10
RECONSTRUCT AN IMAGE IN REFERENCE RESOLUTION LEVEL
ST11
SET THE REFERENCE-RESOLUTION PARAMETER K0 FOR A REFERENCE RESOLUTION IMAGE
ST12
PROCESS AN IMAGE BY USE OF THE PARAMETER K0
ST13
OUTPUT THE IMAGE SIZE AS IT IS
END

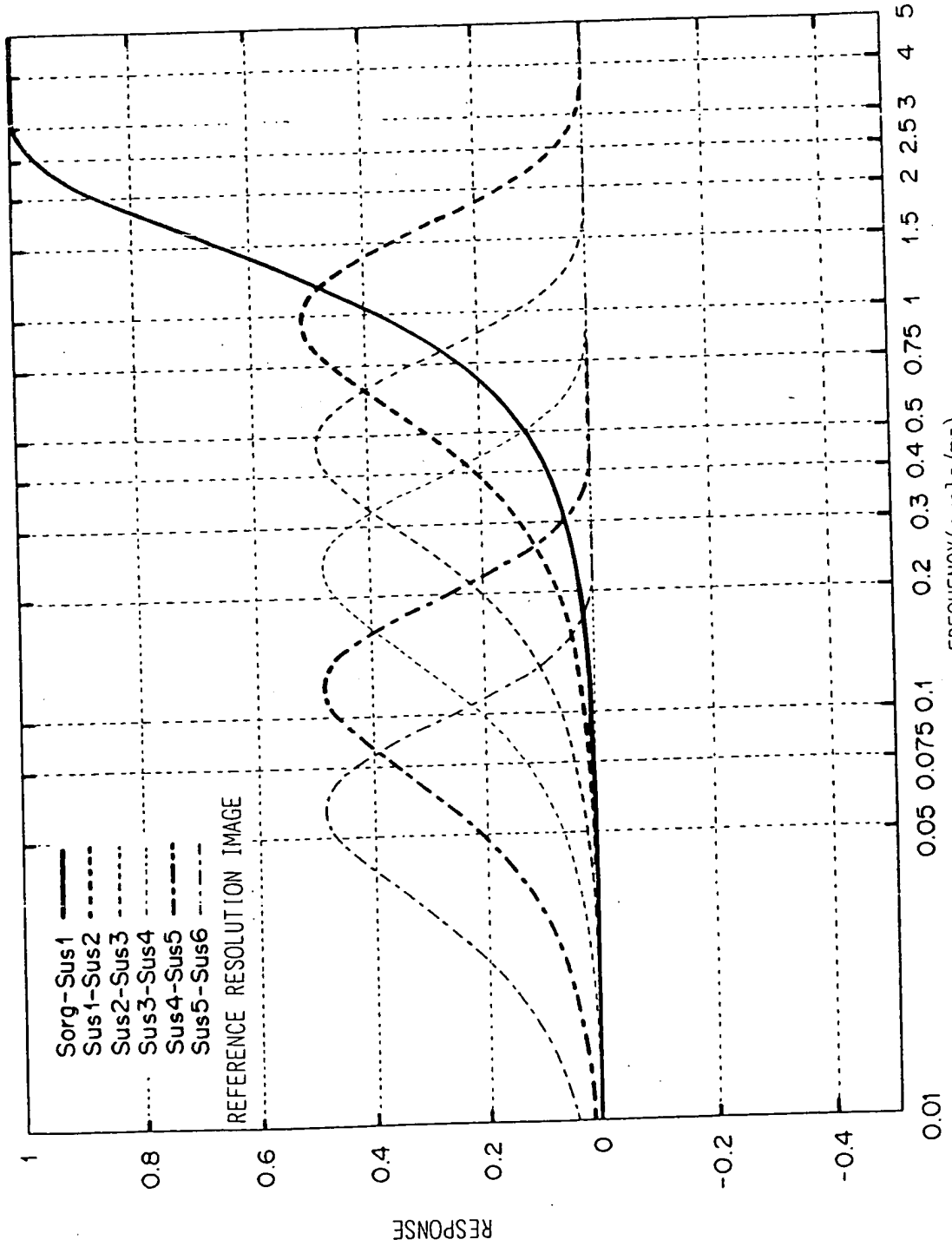


FIG. 4

Patent Publication

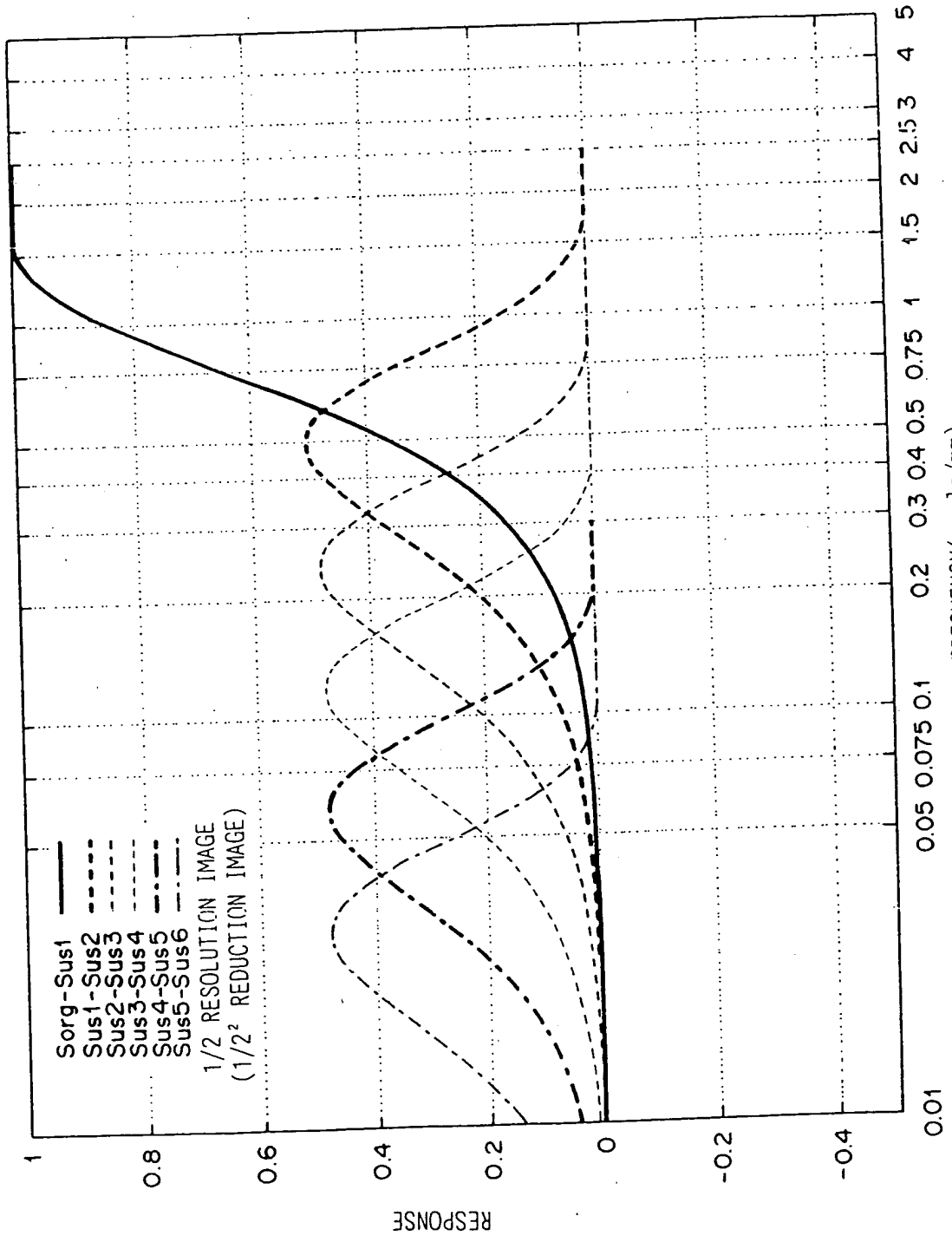

RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/2 RESOLUTION IMAGE
(1/2² REDUCTION IMAGE)

FIG.5

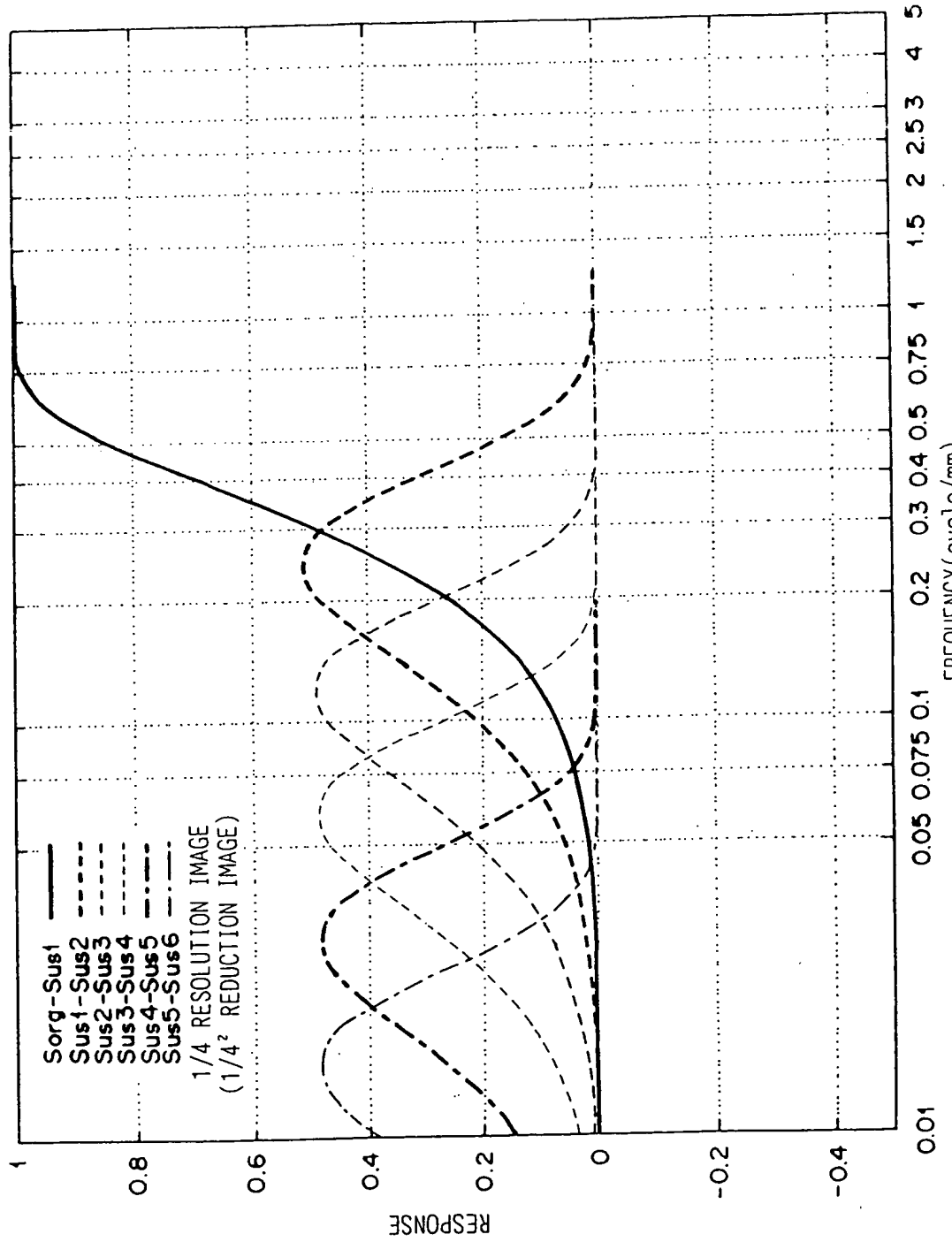

Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/4 RESOLUTION IMAGE
(1/4² REDUCTION IMAGE)
RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)

FIG. 6

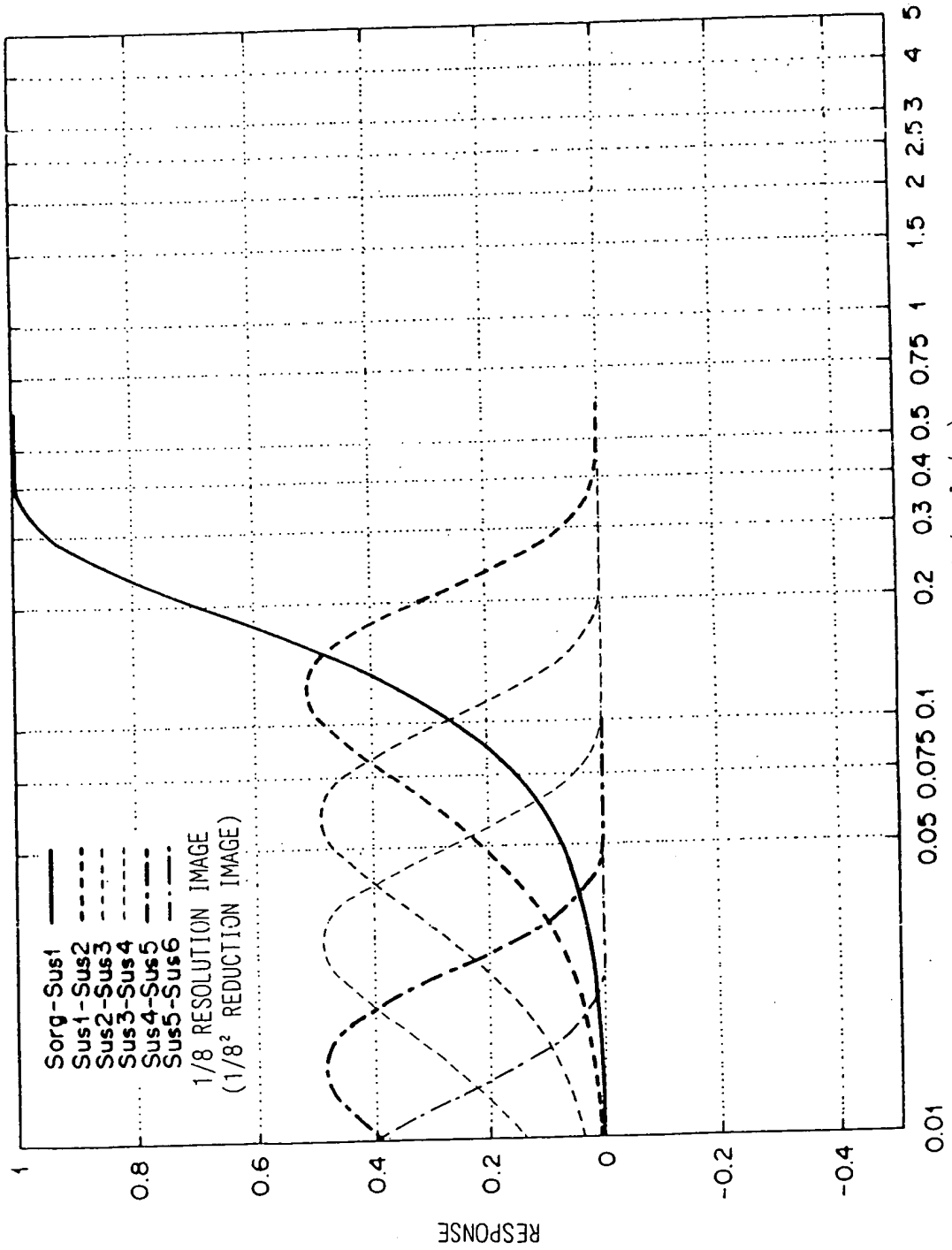

RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/8 RESOLUTION IMAGE
(1/8² REDUCTION IMAGE)

FIG. 7

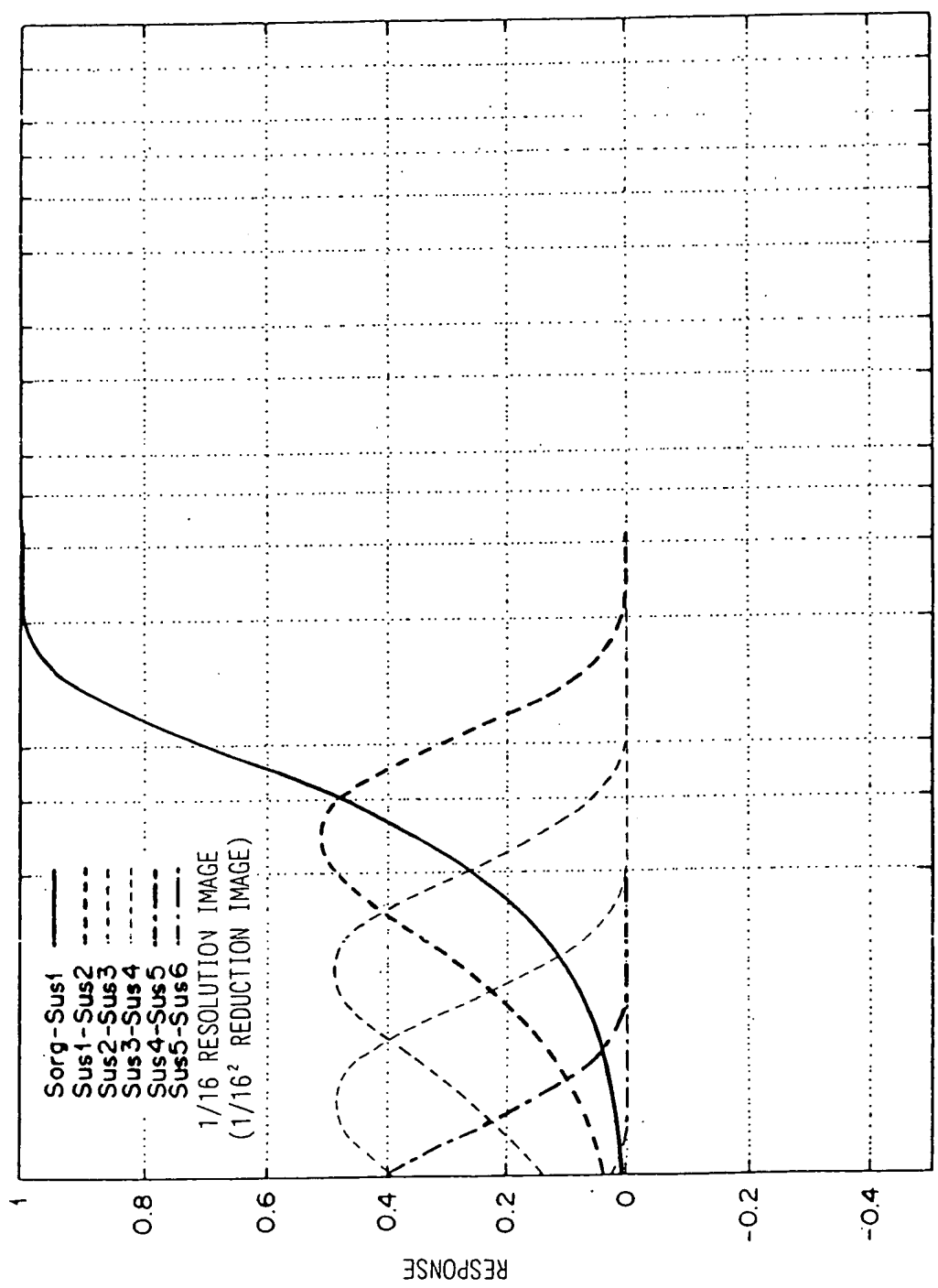

Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/16 RESOLUTION IMAGE
(1/16² REDUCTION IMAGE)
RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)

FIG. 8

TOSHIBA 01624469

FIG.9

REFERENCE RESOLUTION IMAGE	Sorg	Sus 1	Sus 2	Sus 3	Sus 4	Sus 5	Sus 6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		Sorg	Sus 1	Sus 2	Sus 3	Sus 4	Sus 5
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			Sorg	Sus 1	Sus 2	Sus 3	Sus 4
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				Sorg	Sus 1	Sus 2	Sus 3
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					Sorg	Sus 1	Sus 2

YAMADA Q61218
IMAGE PROCESSING METHOD AND S
AND STORAGE MEDIUM
February 8, 2001
Darryl Mexic 202-293-7060
9 of 14

YAMADA
IMAGE PROCESSING METHOD AND SYSTEM,
AND STORAGE MEDIUM
Q61218
February 8, 2001
Darryl Mexic 202-293-7060
10 of 14

FIG.10

REFERENCE RESOLUTION IMAGE	Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4	Sus4-Sus5	Sus5-Sus6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4	Sus4-Sus5
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				Sorg-Sus1	Sus1-Sus2	Sus2-Sus3
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					Sorg-Sus1	Sus1-Sus2

TOSHIBA-0156260

FIG.11

REFERENCE RESOLUTION IMAGE	f 1	f 2	f 3	f 4	f 5	f 6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		f 2	f 3	f 4	f 5	f 6
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			f 3	f 4	f 5	f 6
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				f 4	f 5	f 6
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					f 5	f 6

YAMADA Q61218
IMAGE PROCESSING METHOD AND S... M.
AND STORAGE MEDIUM
February 8, 2001
Darryl Mexic 202-293-7060
11 of 14

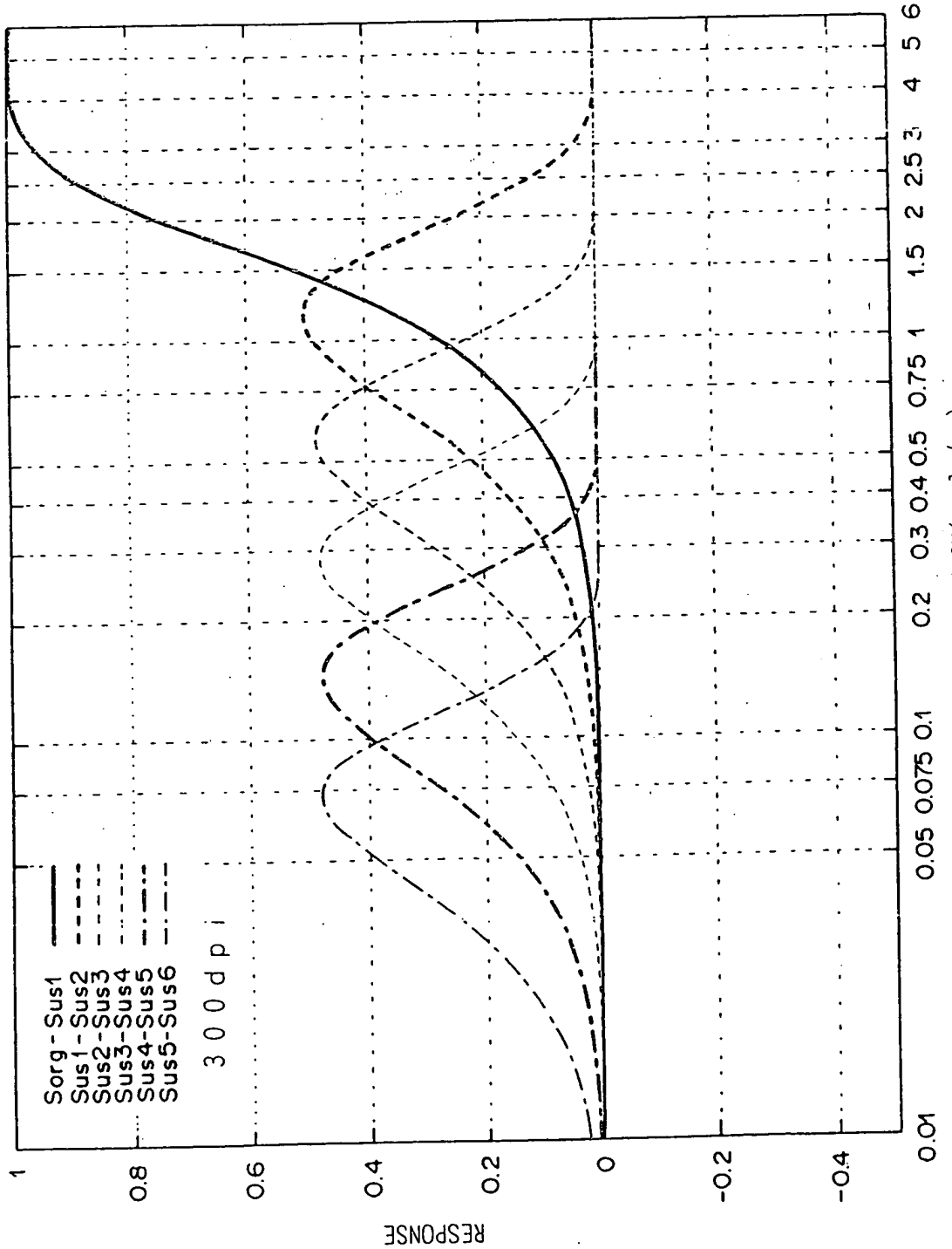

RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
300dpi

FIG.12

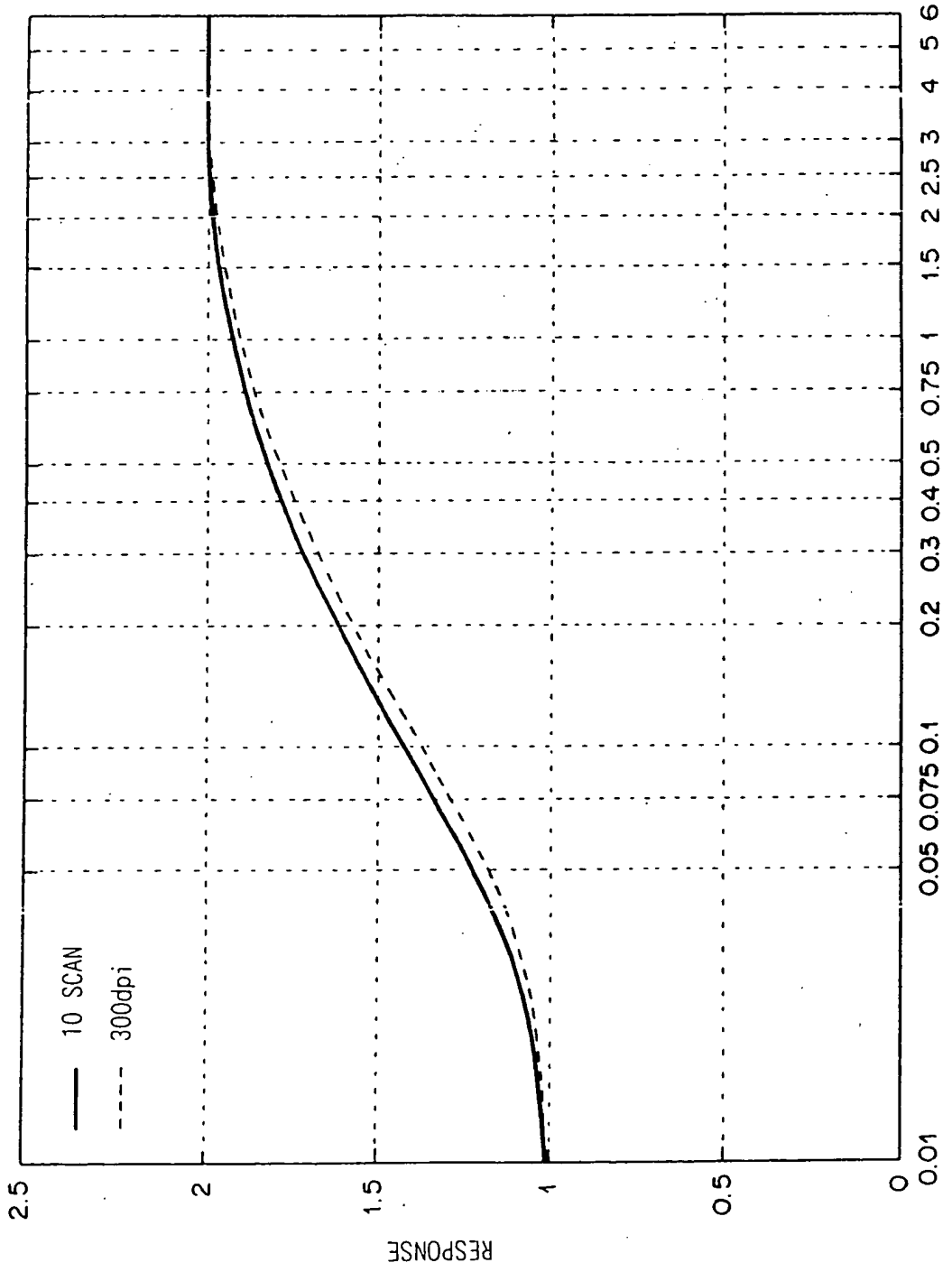

10 SCAN
300dpi
RESPONSE
2.5
2
1.5
1
0.5
0
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)

FIG. 13

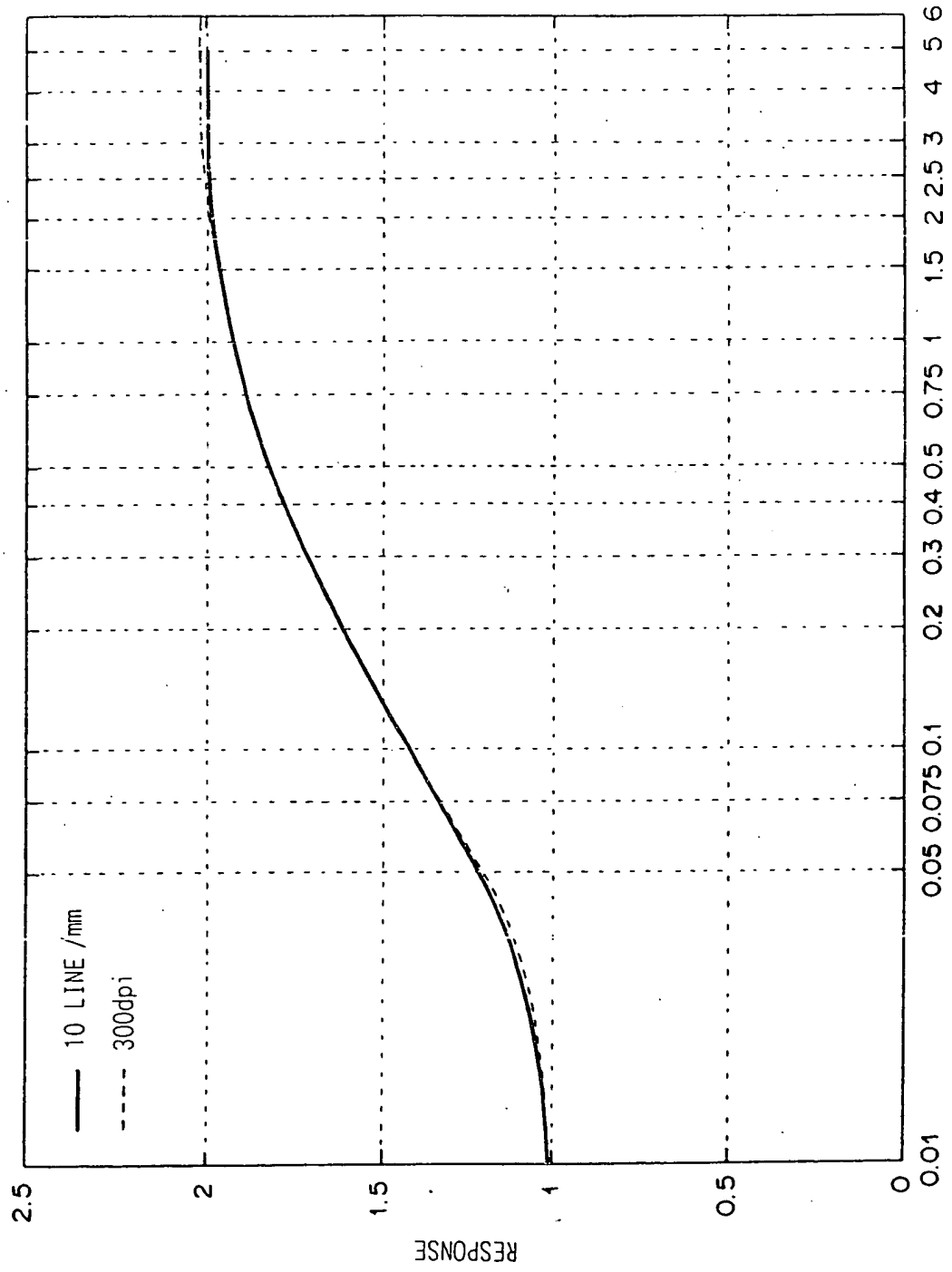

RESPONSE
2.5
2
1.5
1
0.5
0
10 LINE /mm
300dpi
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)

FIG. 14